December 14, 2006

Mayor Kent Jeppeson
Mantua City
123 Main St
Mantua, UT 84000

Dear Mayor Jeppeson:

Attached is one *Draft* copy of the Community Transportation Plan (CTP) developed for Mantua. This CTP is a tool to help guide transportation decisions in your community, which will help meet the transportation visioning discussed during the public meetings held March 7th and 8th, 2006.

Many projects were discussed during the public meetings, and local priorities established for several projects while developing the CTP. This project list will help the city develop an improvement program addressing your unique transportation issues. We are forwarding any issues and comments for the state highway system, which are highway operations-based, to the appropriate Utah Department of Transportation (UDOT) Region Office so they may be addressed as priorities allow. In the meantime, UDOT will also be using the list of issues identified for State Routes in our Long-Range Planning Process. The Statewide Long-Range Transportation Plan (LRP) identifies needs on the state highway system from which projects are selected to be included in our Statewide Transportation Improvement Plan (STIP).

The next step in the Community Transportation Plan process is for Mantua to garner appropriate public involvement through your established public comment procedure. Then the CTP should be sent before the Mantua City Council for their approval. It is important to restate that a CTP is a living document that changes as your city changes. We encourage you to revise the CTP as frequently as necessary to meet Mantua's needs.

Please forward any final edits that you deem appropriate for the document. We will be happy to make those changes and return the final document to you for your use.

Thank you again for allowing us to help you develop your Community Transportation Plan. We always value public input regarding the state highway system. Mantua has provided us valuable insight for our Statewide Long-Range Planning Process.

Sincerely,

Kim Schvaneveldt, P.E.
Engineer for Transportation Planning

Enclosure

cc: Cory Pope, Region One Director
Andy Neff, Region One Public Involvement Coordinator

Town of Springdale
Community Transportation Plan

October 10 - 11, 2006

Prepared as a community involvement project by:

Town of Springdale

UDOT Planning Section

Town of Springdale
Community Transportation Plan

Mayor	**Pat Cluff**
Town Council	**Louise Excell** **Stan Smith** **Kathy LaFave** **Robert Warren**
Town Manager	**Rick Wixom**
Director of Community Development	**Tom Dansie**
Town Clerk	**Fay Cope**

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1. Introduction

1.1. Background

There is ample archeological evidence that Zion Canyon was settled first by erstwhile indigenous people. The earliest Basket maker culture in Zion dates to approximately 500 A.D. and settlement appeared to be continuous until the Anazasi abandoned the Zion area around 1200 A.D. The earliest Europeans to arrive in the area found the Paiute people cultivating crops along the Virgin River.

The first explorers of European descent were members of the Dominguez-Escalante party, who crossed the Virgin River near the present site of LaVerkin in 1776, and various trappers and traders, as well as Spaniards en route to California from New Mexico, passed through the area but left little record of their passing.

The actual settlement of Springdale in its present location occurred in the fall of 1862 when a hearty group of Mormon pioneers, responding to the call from Brigham Young to establish a Cotton Mission in the south, came to the mouth of the canyon. Local lore has it that Albert Petty, one of the first Mormon settlers, took his wife to the spot he had chosen for their house beside some large springs and asked her to name their new home. She called it Springdale.

The Springdale town site was surveyed in 1863 and, ironically, in 1864 Springdale became a branch or satellite of the much larger and well-developed community of Rockville, a few miles to the west. Springdale settlers regularly traveled to Rockville to shop, to go to church or to receive and send messages at the post office and telegraph office. Springdale had none of these conveniences until some time later. A public building, used as a school and a church, was built around 1885, and the first post office opened in Springdale in 1897.

Life was difficult at first. The original houses were built of rough-hewn logs or river willows and chinked or covered with mud. Roofs were made of willows lashed together and covered with bark

and dirt. Few houses had the luxury of glass panes for windows. Clothing and tools were largely homemade, and because there was little commerce with the world outside, Springdale residents were almost totally self-sufficient. And, of course, settlers were constantly alert to the danger of hostile Indians or the ravages of nature in the form of raging flash floods, drought or rockslides.

Although they waited many years for the conveniences we take for granted today, early settlers recognized the importance of education, and schools were begun as soon as the town was settled. At first, school was held in homes and books and supplies were limited. Individual residents donated books and supplies, and attendance was haphazard at best, since every child's first duty was to help the family eke out a subsistence living in the fields, pastures and orchards. Children often took turns going to school, and those who attended learned reading, some writing, a little arithmetic, and spelling.

Springdale remained a sleepy Mormon agricultural settlement until after the turn of the twentieth century. Around 1912, roads into the area had improved enough that a resident from a nearby town drove the first automobile into Springdale, and by 1917, groups of tourists from as far away as Salt Lake City were arriving in town to stay at Wylie Way Camp, one of Zion's first tourist facilities. Springdale was about to change forever.

On September 15, 1920, Mukuntuweap National Monument was dedicated. It would later become Zion National Park. From that point, the changes were stunning in their speed. Electricity, gasoline, tourist camps and stores grew up to meet the needs of the tourists. Young men found employment in the new national monument, and many left their family farms to begin new careers

in resource management and tourism. Eventually a paved road, telephones and other amenities followed.

For nearly a century following its settlement, Springdale had seemed isolated because of the closed nature of the canyon. There had been one way in and out. Even though the now-famous cable works were begun in 1901 to bring timber into the canyon from the East Rim of Zion, no highway allowed access to the community and the park from the east. That all changed with the construction of the Zion-Mt. Carmel Highway and Tunnel, dedicated in 1930. The tunnel, nearly a mile long and carved through solid sandstone, eerily cool, damp and dark, but wide enough barely for two lanes of traffic, helped to bring the world to Springdale's door as word of the magnificent features of Zion National Park began to reach the outside world.

By the mid-twentieth century, Springdale began to boom, and residents of the unincorporated, sprawling village recognized a need for some form of local government. In 1959, Springdale incorporated to become a municipality. As time passed, the old Mormon pioneer features of the community were replaced by contemporary structures necessary to sustain the bustling tourist economy that Springdale enjoys today. Even with such changes, many of the core values of its pioneer settlers still endure. Throughout the town, the pioneer architecture incorporating native sandstone and other design features from its past are clearly evident. Most importantly, Springdale remains a friendly, safe and clean community, the home of residents who are committed to providing stewardship worthy of a place unique in the world for its beauty and spiritual qualities.

History taken from Springdale Town website:http://www.springdaletown.com

1.2. Study Need

Although currently a small community of less than 650, Springdale is projected to grow by over 74% between 2000 and 2010. According to Springdale's General Plan, the 2000 Census calculated the permanent year-round population of the Town at less than 500 people but nearly 3 million visitors coming to Zion National Park pass through the community annually. Many of these visitors use the services and amenities provided by Springdale residents. With the increasing population and heavy tourist traffic in Springdale, the need for infrastructure improvements and a more extensive transportation plan is necessary for Springdale and the surrounding area. A well-established transportation plan would provide direction for continual maintenance and improvements to Springdale's transportation system.

Some of the major transportation issues around the State are as follows:

- Safety
- Railroad crossings
- Trails (bicycle, pedestrian, and OHV)
- Signals
- City interchange aesthetics
- Connectivity of roadways
- Property access
- Truck traffic
- Alternate routes
- Speed limits

Springdale recognizes the importance of building and maintaining safe roadways, not only for the vehicle traffic, but also for pedestrians and bicyclists.

1.3. Study Purpose

The purpose of this study is to assist in the development of a transportation plan for Springdale. Springdale could adopt this plan as a companion document to the Town's General Plan. With the transportation plan in place the Town may also qualify for grants from the State Quality Growth Commission.

The primary objective of the study is to establish a solid transportation plan to guide future developments and roadway expenditures. The plan includes two major components:

Short-range action plan

Long-range transportation plan

Short-range improvements focus on specific projects to improve deficiencies in the existing transportation system. The long-range plan will identify those projects that require significant advanced planning and funding to implement and are needed to accommodate future anticipated traffic demand within the study area.

1.4. Study Area

The study area is Springdale, Utah and land adjacent to it. A general location map is shown in Figure 1-1. A more detailed map of the study area and Town limits is shown in Figure 1-2. The roadway network within the study area includes State Route 9, and other local roads. Each of these roadways provides a vital function to the Town of Springdale and to the State of Utah.

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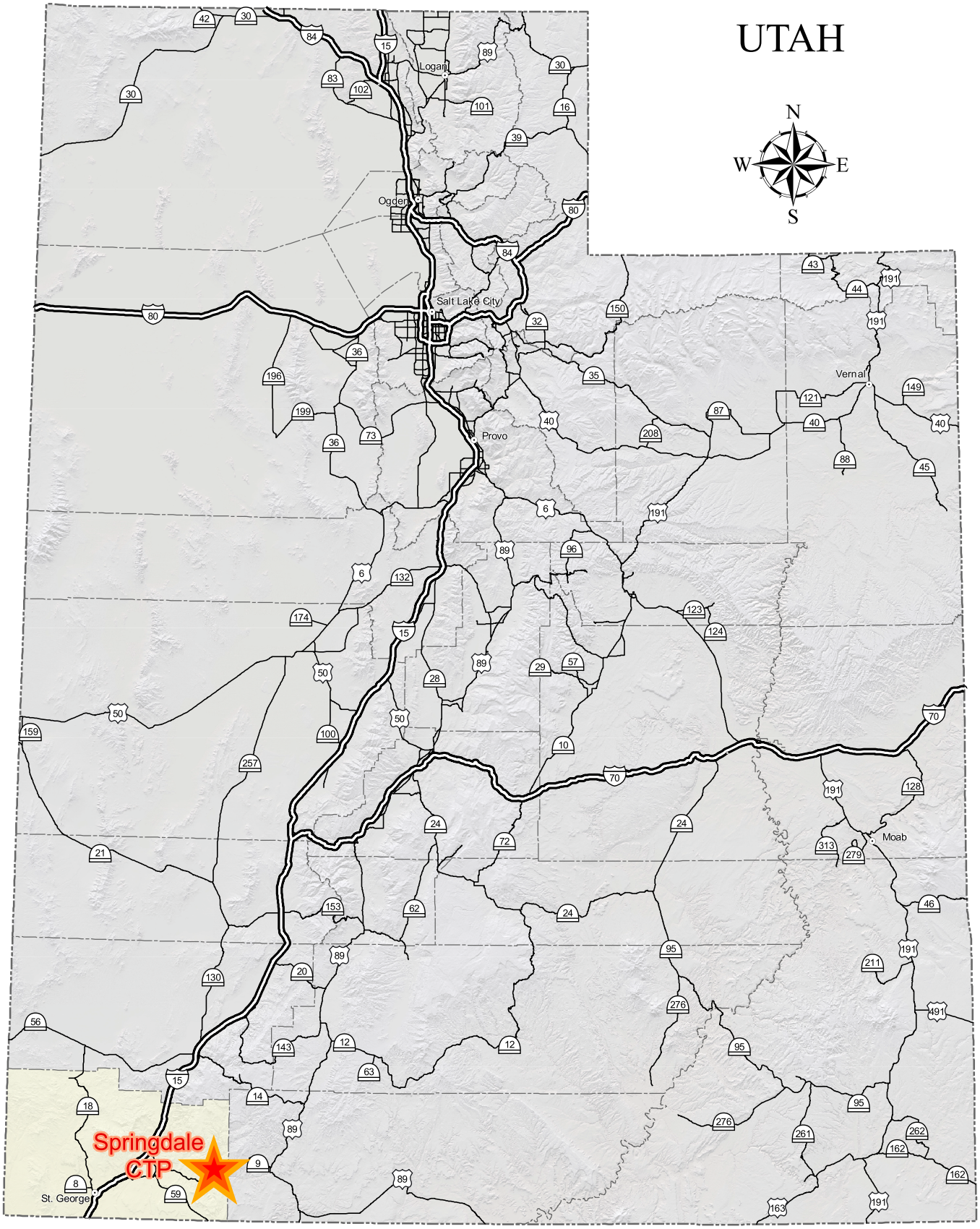
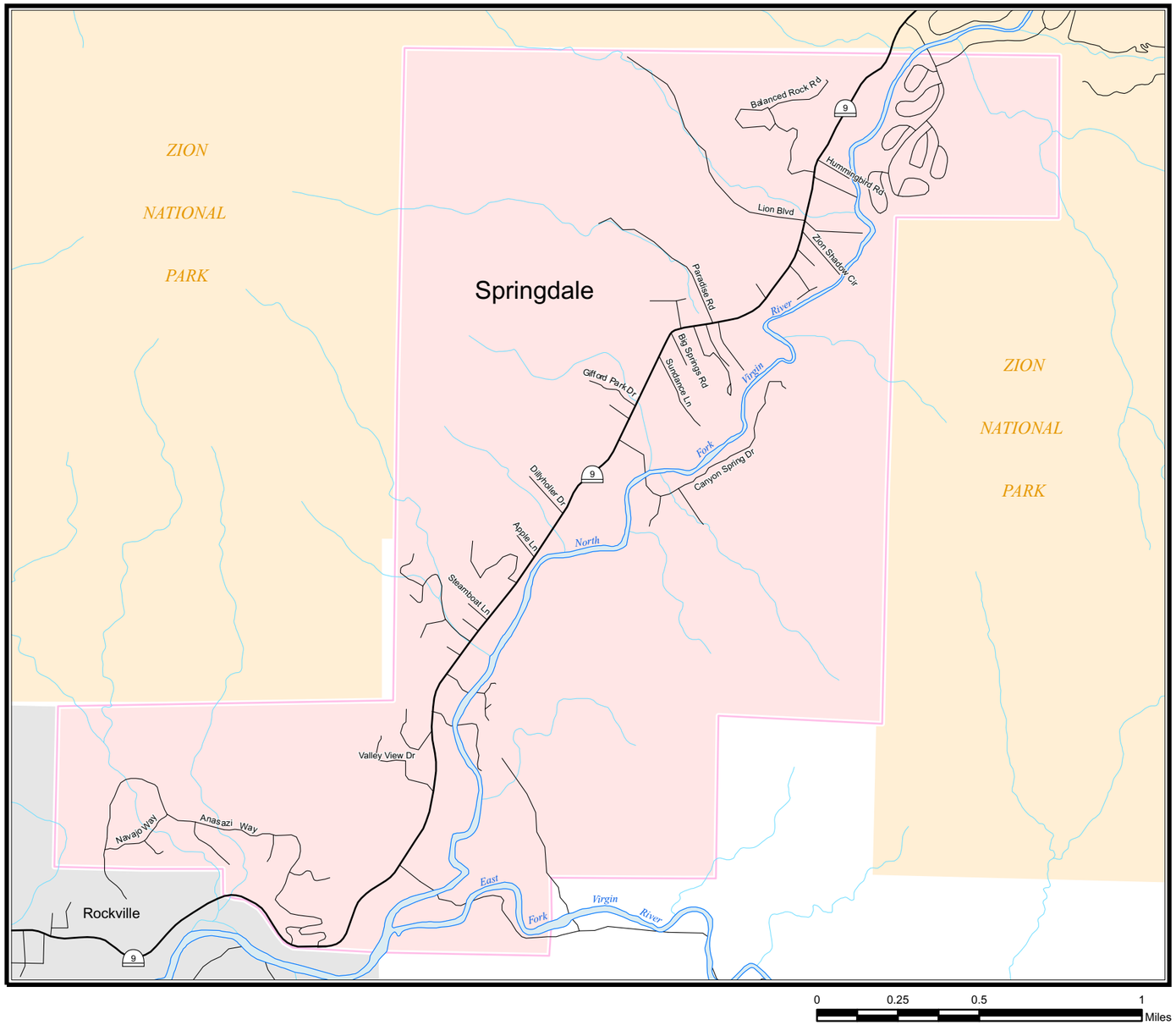
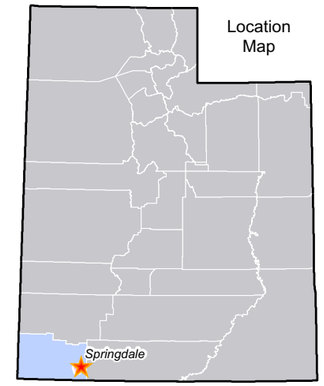
Figure 1-1. Location Map







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State Roads
Other Roads
Streams
Study Boundary
Springdale
Rockville
Zion National Park

Figure 1-2
Study Vicinity Map

1.5. Study Process

The Study, which began in October 2006 is proceeding as a cooperative effort between Town of Springdale, UDOT, and local community members. It is being conducted under the guidance of Springdale Officials.

The following individuals participated in the initial meetings to provide input used to create this document. This group listed below will be referred to as the Technical Advisory Committee, or "TAC," for this document.

List of participants:

- Pat Cluff, Mayor
- Rick Wixom, Town Manager
- Tom Dansie, Dir. Comm. Development
- Fay Cope, Town Clerk
- Kathy LaFave, Council member
- Robert Warren, Council member
- Stan Smith, Council member
- Louise Excell, Council member
- Nathan Merrill, UDOT Region 4 office
- Tim Killen, citizen
- Alison Keith, citizen
- Kristen Benson, citizen
- Nick Wilkes, citizen
- Mark Schraut, citizen
- Barbara Farnsworth, citizen
- Lisa Zumpft, citizen
- Peter Stempel, citizen
- Ross Clay, citizen

The study process for the Springdale Community Transportation Plan consists of three basic parts: (1) inventory and analysis of existing conditions, (2) projection of future conditions, and (3) development of a community transportation plan (CTP). This process involves the participation of the TAC for guidance, review, evaluation and recommendations in developing the CTP to include development of future projects for the identified study area.

The TAC will evaluate each part of the study process. Their comments will be incorporated into the study's final report draft. The remainder of the final report draft will focus on the recommendation and implementation portion of the transportation plan program. Transportation projects that will be recommended for the short-term and long-range needs will be developed based on the TAC's recommendations and concurrence.

The study process allows for the solicitation of input from the public at two TAC workshops. This public participation element is included in the study process to ensure that any decisions made regarding this study are acceptable to the community.

The first TAC workshop provides an inventory and analysis of existing conditions and identification of needed transportation improvements. The second TAC workshop will focus on prioritization of projects, estimation of project costs, and discussion of the funding processes.

The TAC is expected to recommend those comments that are to be incorporated into the report and applicable to the goals of this study. The final report draft will be submitted to the Town for review and comments.

Upon local review of the draft report, UDOT will prepare appropriate changes and submit the final report to the Town for approval. The final report will describe the study process, findings and conclusions, and will document the recommended transportation system projects and improvements.

2. Existing Conditions

An inventory and evaluation of existing conditions within the study area was conducted to identify existing transportation problems or issues. The results of the investigation follow.

2.1. Land Use

In order to analyze and forecast traffic volumes, it is essential to understand the land use patterns within the study area. Although most of the land area is zoned residential, the town's zoning is varied and includes several commercial zones as well. The town is located within Zion Canyon and is surrounded on three sides by the National Park. This constrained geographical setting restricts the ability of the community to pursue typical community development patterns. Citizens of Springdale feel strongly about land use in their town and regulations have created considerable controversy in the past. By analyzing the patterns or changes in land use, we can better predict the ever-changing transportation needs.

The Springdale Zoning map follows in the appendix.

2.2. Environmental

In Utah there are a variety of local environmental issues. Each of the cities and counties need to look at what are the environmental issues in their areas on a case-by-case basis. There are many resources that can help local entities to determine what issues need to be addressed and how any problems that may exist can be resolved.

Some of the environmental concerns around the State are wetlands, endangered species, archeological sites, and geological sites among other issues. Environmental concerns should be addressed when looking at an area for any type of improvement to the transportation system. Protecting the environment is a critical part of the transportation planning process.

Springdale is unique, both in landscape and community. It is surrounded by the natural grandeur of Zion Canyon and it is the gateway to Zion National Park. Springdale is forward thinking and environmentally conscious. Springdale pursues open space and low-impact development in order to protect its natural beauty. The lands surrounding Springdale should be considered a fragile resource where care should be exercised.

All planning processes should include public involvement processes that identify what current residents of the community value and what they want to protect and preserve. Among the top environmental concerns in Springdale are:

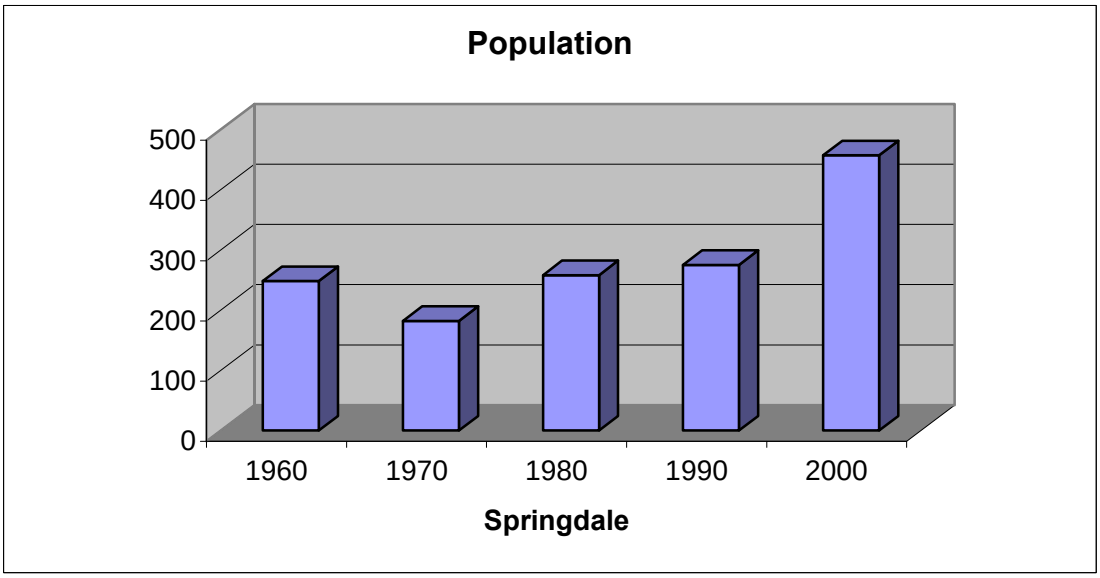
1. Virgin River
2. Steep Slopes/landslides
3. Wildlife/Habitat

2.3. Socio-Economic

Springdale ranks 172nd out of 235 incorporated cities and towns for population in the state of Utah. Historical growth rates have been identified for this study, because past growth is usually a good indicator of what might occur in the future. Chart 2-1 identifies the population growth over the past 50 years for the State of Utah, Washington County and Springdale.

Chart 2-1 Population

Year	Utah	Washington County	Springdale
1950	695,900	9,836	na
1960	900,000	10,271	248
1970	1,066,000	13,669	182
1980	1,474,000	26,065	258
1990	1,729,227	48,560	275
2000	2,246,553	90,354	457



Source: U.S. Bureau of the Census
Governor's Office of Planning and Budget
http://www.governor.utah.gov/dea

Chart 2-2 identifies that population change in Springdale has ranged from - 27% between 1960 and 1970 to + 66% between 1990 and 2000. Chart 2-3.identifies yearly population growth rates for the State of Utah and Washington County.

In Utah, the words "Washington County" have become almost synonymous with growth. Rapid population growth and a booming economy have created cries of "labor shortage" in recent years. With growth in all sectors, it may seem difficult to find problems in the Washington County economy. However, recent spikes in home prices have placed pressure on an already tight labor market.

Springdale has some unique demographic characteristics when compared with the State. While the Year 2000 Census calculated the permanent year-round population of the Town at less then 500 people, nearly 3 million visitors to Zion National Park pass through the community annually. Many of these visitors use the services and amenities provided by Springdale residents.

Springdale has an older population when compared with the state of Utah. The State's median age is 27.1 years and Springdale's is 43.9 years.

The 1999 median household income in Springdale was $40,607 slightly less than the State median household income of $45,773 for that same year.

Chart 2-4 identifies the employment growth rates for Washington County in comparison to the State and also the Southwest Multi-County District.

The majority of employees in Washington County work in five primary employment sectors: Government, Trade, Services, Manufacturing and Telecommunications. . In Washington County, these five sectors make up approximately 93% of the labor force.

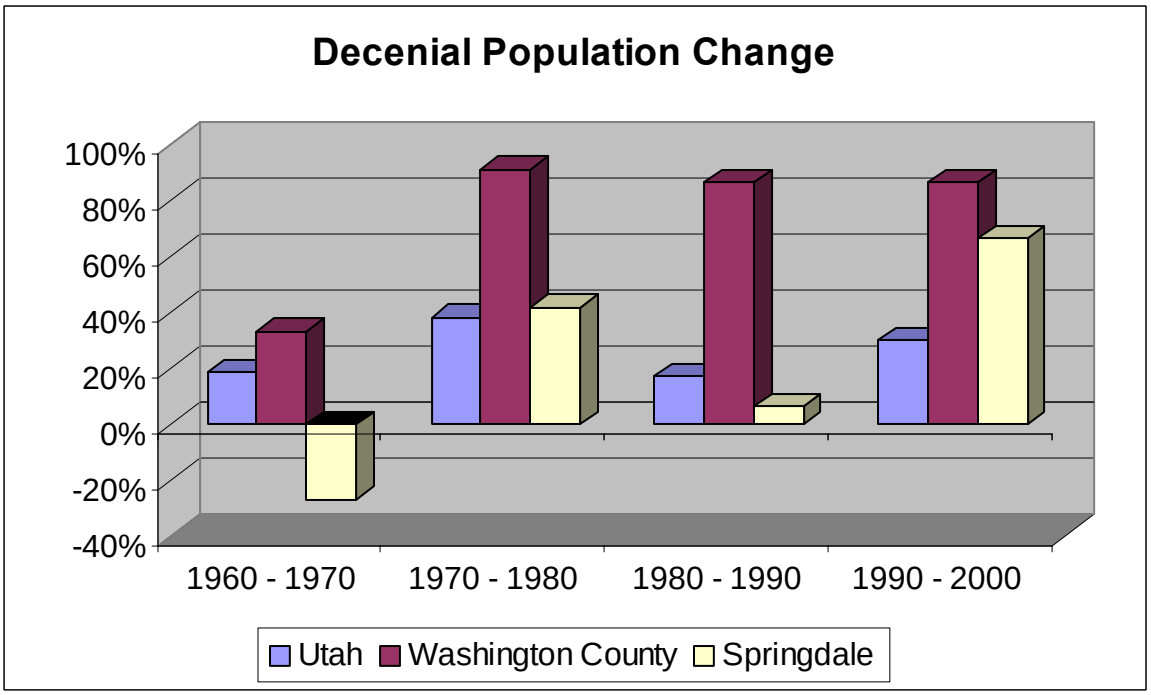
Chart 2-5 identifies the various employment sectors in Washington County and how they've changed since 1980.

Tourism, recreation, and its desirability as a retirement spot have fueled growth in service and trade industries. Spurred by in-migration, the county experienced spectacular economic growth through most of the 90s. Despite a national economic downturn, Washington County figures have remained decidedly upbeat.

Some of the largest employers in Washington County according to the Utah Department of Workforce Services, are Washington School District, Intermountain Health Care, Wal-Mart, St. George Town, Dixie College, Federal Government, SkyWest Airlines, and Washington County.

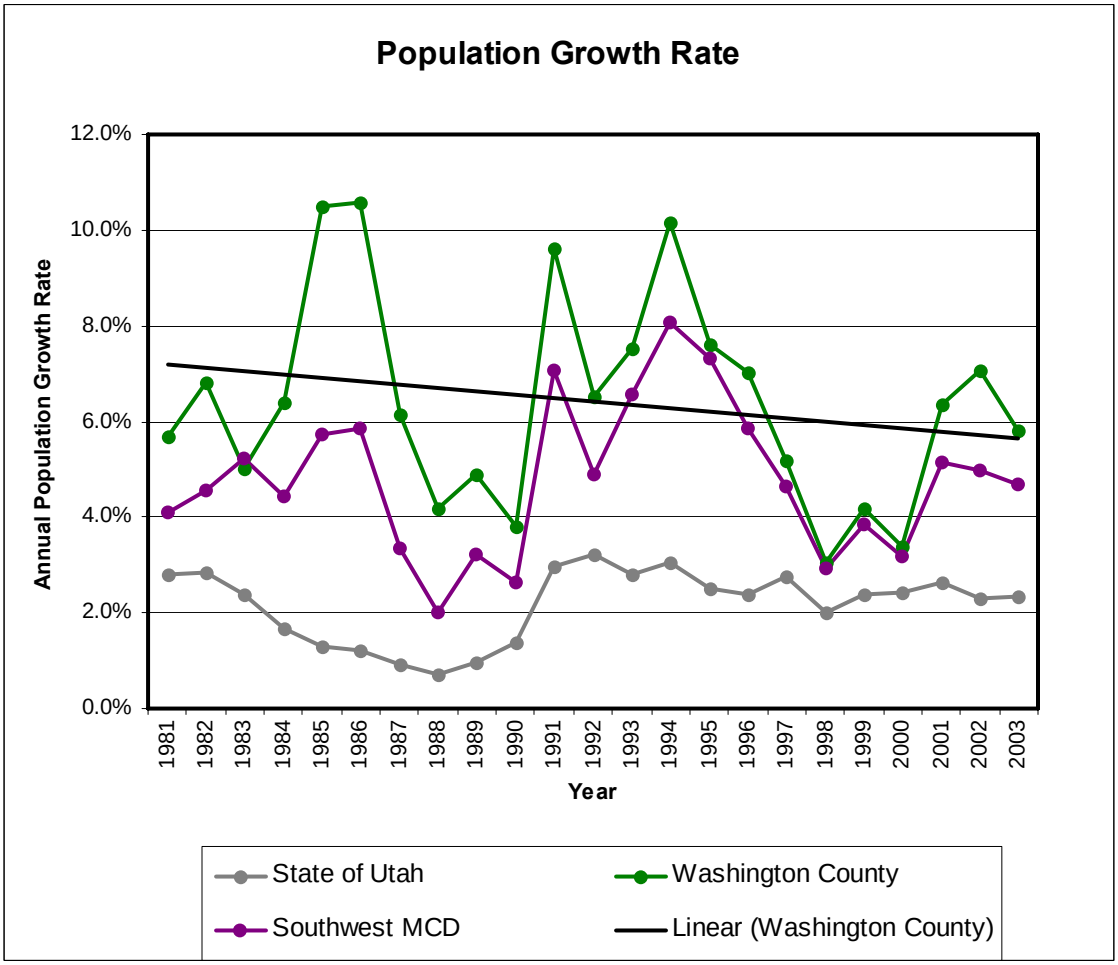
Chart 2-2. Population Change

Year	Utah	Washington County	Springdale
1950 - 1960	29%	4%	Not Available
1960 - 1970	18%	33%	-27%
1970 - 1980	38%	91%	42%
1980 - 1990	17%	86%	7%
1990 - 2000	30%	86%	66%



Source: U.S. Bureau of the Census
Governor's Office of Planning and Budget
http://www.governor.utah.gov/dea

Chart 2-3. Population Growth Rate (1980-2000)

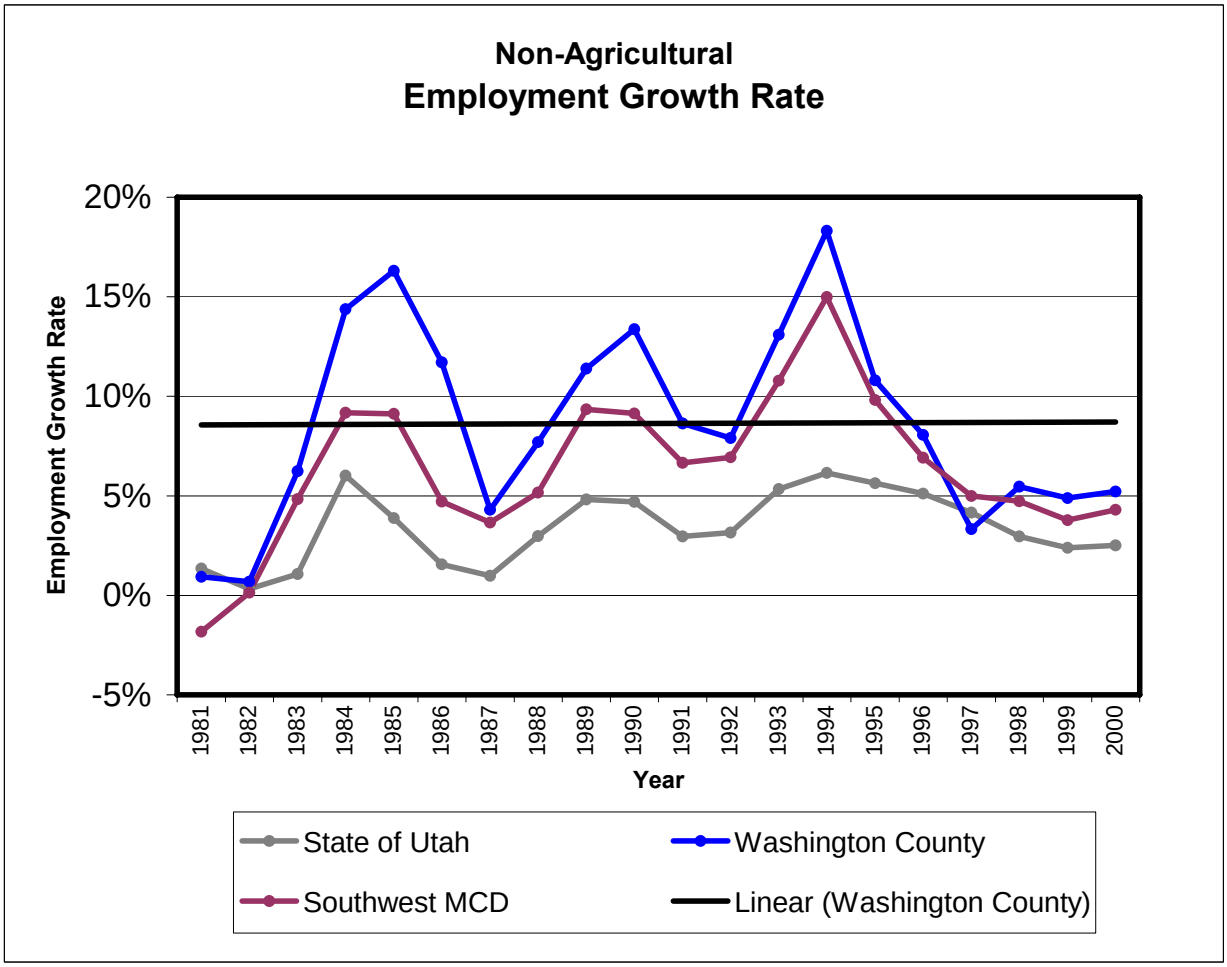


MCD = Multi-County District

Southwest MCD = Washington, Kane, Iron, Garfield, Beaver Counties

Source: Governors Office of Planning and Budget
http://www.governor.utah.gov/dea

Chart 2-4. Employment Growth Rate (1980-2000)



MCD = Multi-County District

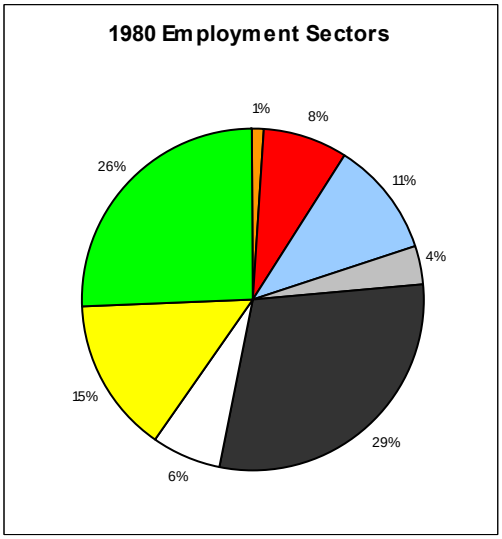
Southwest MCD = Washington, Kane, Iron, Garfield, Beaver Counties

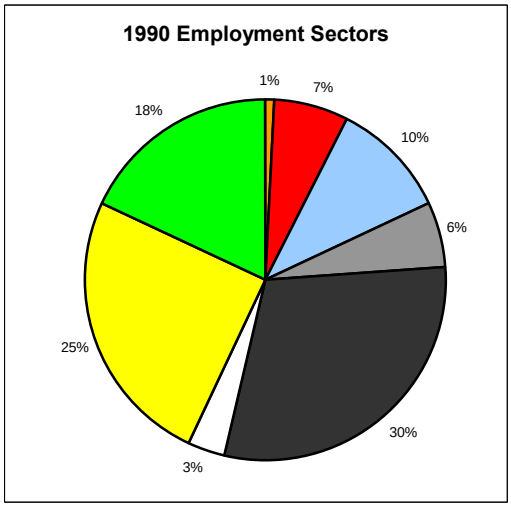
Source: Governors Office of Planning and Budget
http://www.governor.utah.gov/dea

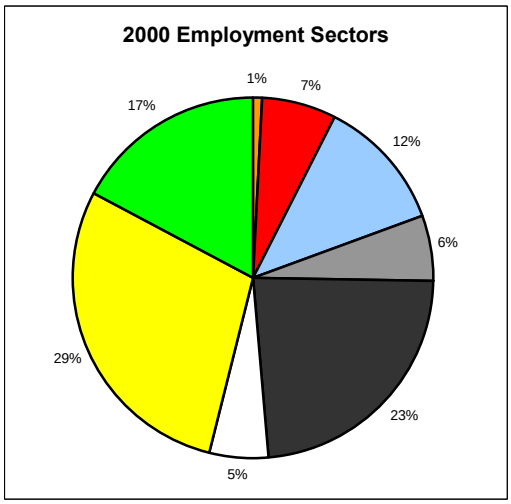
Chart 2-5. Employment Occupation Sectors (Washington County 1980-2000)

	Sector	1980	1990	2000	Δ% 1980-2000
	Construction	1.1%	0.7%	0.7%	-36.36%
	FIRE	8.2%	6.8%	6.7%	-18.29%
	Government	10.7%	10.5%	12.2%	14.02%
	Manufacturing	3.5%	5.9%	5.7%	62.86%
	Mining	29.6%	29.7%	23.4%	-20.95%
	Services	6.3%	3.5%	5.3%	-15.87%
	TCPU	14.8%	25.0%	28.9%	95.27%
	Trade	25.8%	18.0%	17.2%	-33.33%

FIRE = Finance, Insurance & Real Estate
TCPU = Telecommunications & Public Utilities







Source: Governors Office of Planning and Budget
http://www.governor.utah.gov/dea

2.4. Functional Street Classification

This document identifies the current functional characteristics of the federal aid roadway network of Springdale. Functional street classification is a subjective means to identify how a roadway functions when a combination of the roadway's characteristics are evaluated. These characteristics include; roadway configuration, right-of-way, traffic volume, carrying capaTown, property access, speed limit, roadway spacing, and length of trips using the roadway.

The primary functional classifications used in categorizing federal aid roadways are: Interstate, Arterial, Collector, and Local.

An Arterial's function is to provide traffic mobility at higher speeds with limited property access. Traffic from the local roads is gathered by the Collector system, which provides a balance between mobility and property access trips. Local streets and roads serve property access based trips and these trips are generally shorter in length.

The Springdale area is accessed via SR-9, a principal arterial. SR-9 is the main street through the town and runs through Zion National Park meeting up with SR-89.

The current functionally classified system generally defines the higher traffic roads, so only minor additions or changes will be required.

Figure 2-1 shows the current functional class of roadways in the Springdale study area.

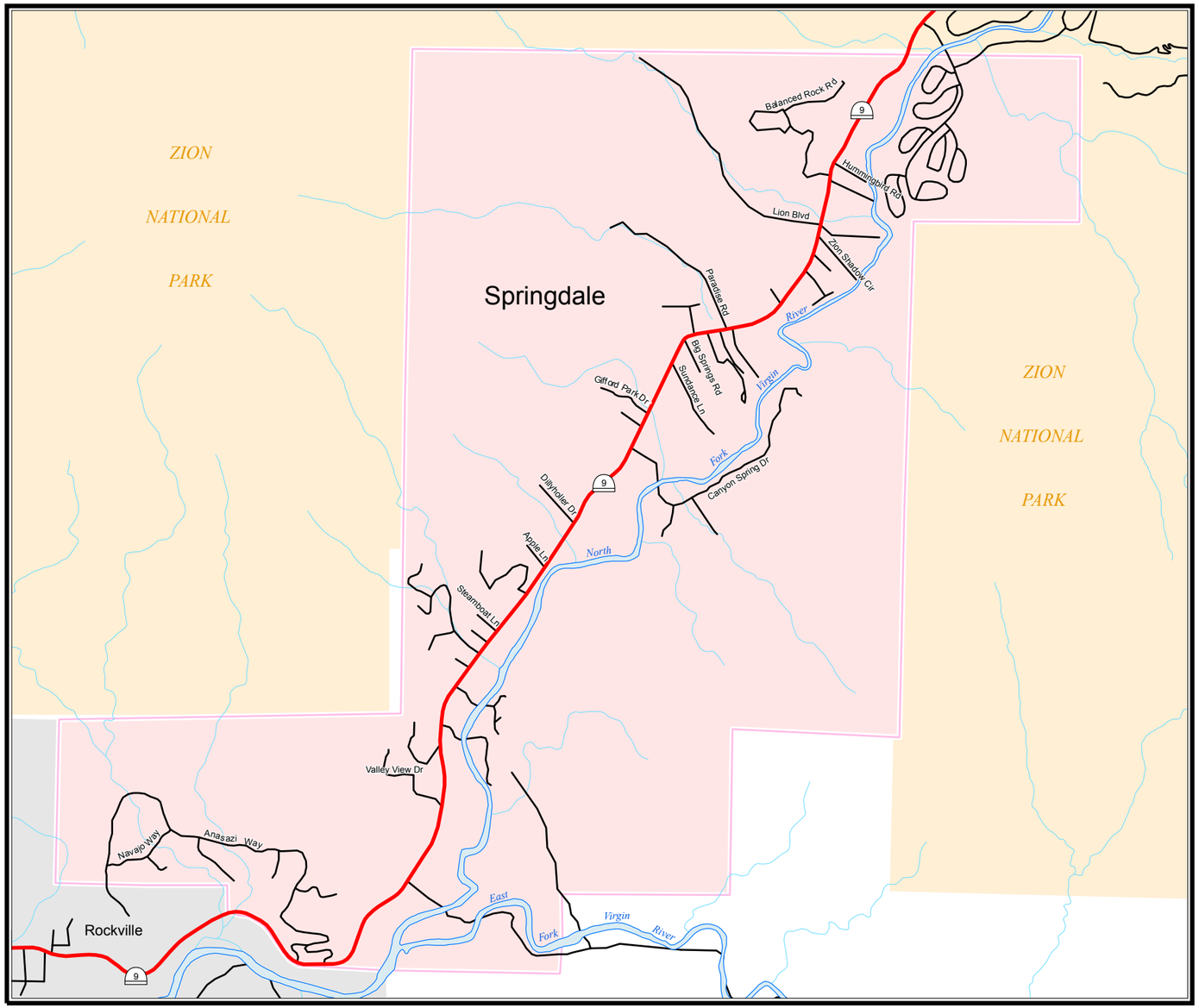
2.5. Bridges

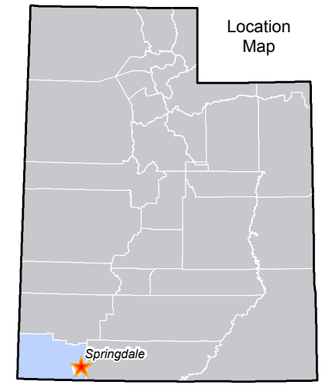
There are (2) bridges on the state system located in the study area that could be eligible for federal bridge maintenance in the form of rehabilitation funds. Bridges are maintained and minor repairs made with maintenance funds. A bridge is rehabilitated or replaced as it deteriorates over time and as traffic volumes increase. Sufficiency rating indicates current condition of the structure with a rating of 100 showing a structure that is in excellent shape. A rating nearing 50 will reveal a structure that is in need of attention and is eligible for federal funding. Table 2-1 Summarizes the bridge structures in and around the study area.

Table 2-1 – Bridge Sufficiency Ratings

Bridge Number	Rte	Location	Bridge Rating	Mile Point
OF-82	9	Springdale Wash	55.2	31.524
OE-1328	9	Black Canyon Wash	75	32.214

Figure 2-2 shows bridge condition data in the Springdale study area.





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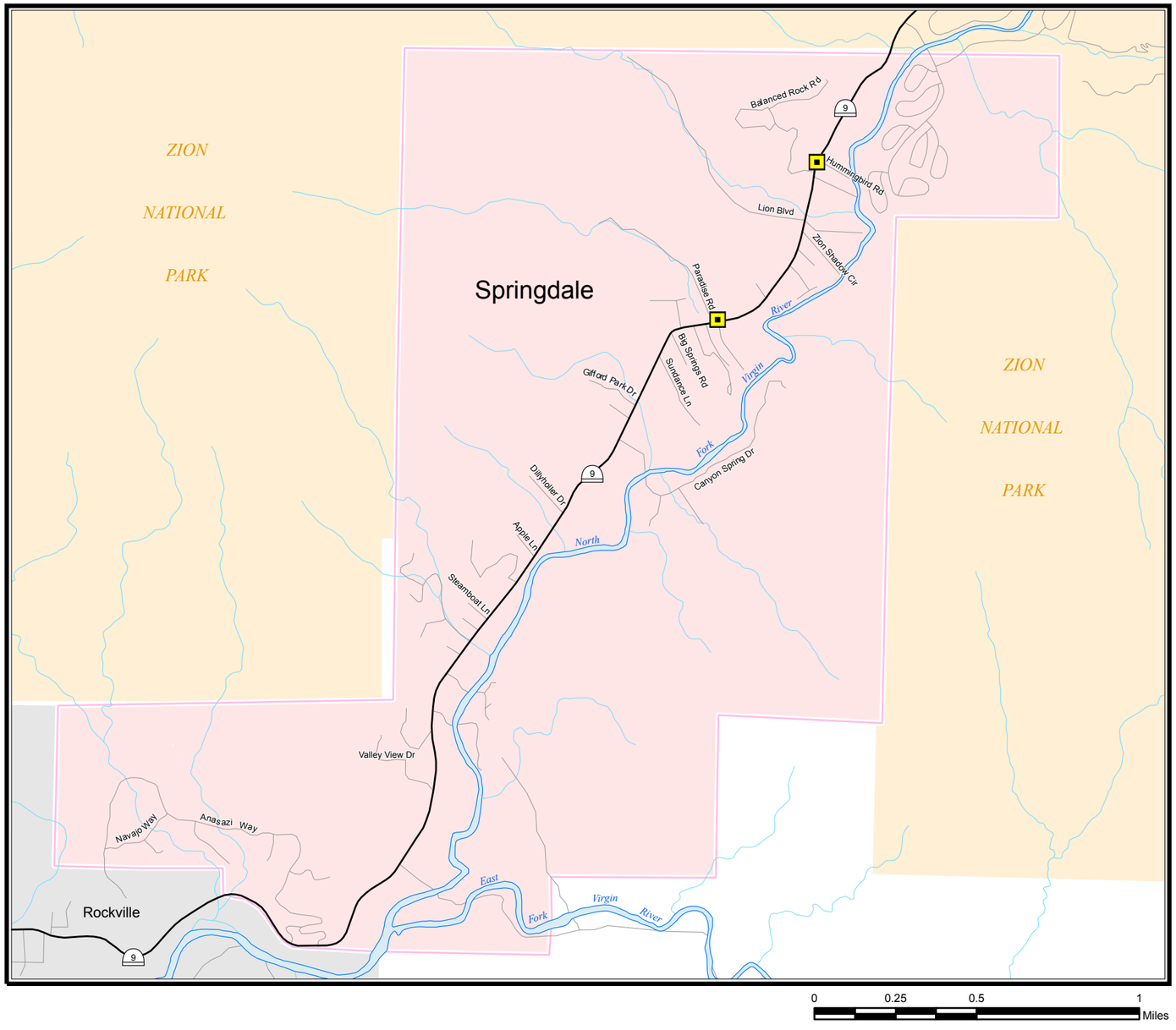
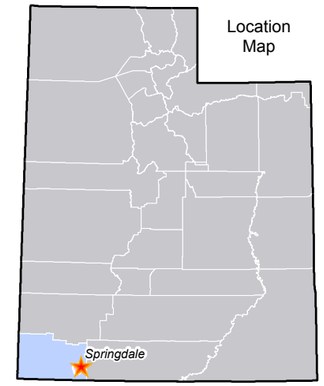
Functional Class

- Interstate
- Freeway Expressway
- Other Principal Arterial
- Minor Arterial
- Collector
- Minor Collector
- Local

Figure 2-1
Functional Classification Map





N

Bridges

Funding

- Eligible for Replacement Funds
- Eligible for Rehabilitation Funds
- Maintenance Funds Only

- State Roads
- Other Roads
- Streams

Figure 2-2
Bridge Sufficiency Map

2.6. Traffic Counts

Table 2-2
Springdale's Average Annual Daily Traffic 1998 - 2005

Route Name	Beg. Mile	End Mile	Location Description	1998 AADT	1999 AADT	2000 AADT	2001 AADT	2002 AADT	2003 AADT	2004 AADT	2005 AADT
SR - 9	28.47	29.78	East Incorporated Limits Rockville (Washington Co.)	3470	3595	3602	3640	3785	3730	3880	2180
SR - 9	29.78	30.08	West Incorporated Limits Springdale	3760	4010	4018	4085	4180	4105	4270	2280
SR - 9	30.08	32.66	Kinesave Drive Springdale	3760	4010	4018	4085	4180	1790	1865	1920

*Note: These figures are based upon best available information and are to be considered in the context of historical growth patterns.

Recent average daily traffic count data were obtained from UDOT. Table 2-2 shows the traffic count data on the key state roadway of the study area. The number of vehicles in both directions that pass over a given segment of roadway in a 24-hour period is referred to as the average daily traffic (ADT) for that segment.

Chart 2-6 below illustrates the average daily traffic over the last three years passing Kinesava Drive. Traffic is increasing. However, the next chart (2-7) shows traffic is higher at points along SR-9 before Kinesave Drive. The dramatic decrease in traffic in Springdale nearing Zion National Park could be a result of the successful shuttle system in which Springdale Town participates. A map illustrating existing and future traffic, peak season traffic, and roadway capacities is presented in the Traffic Forecast section 3.2

Chart 2-6

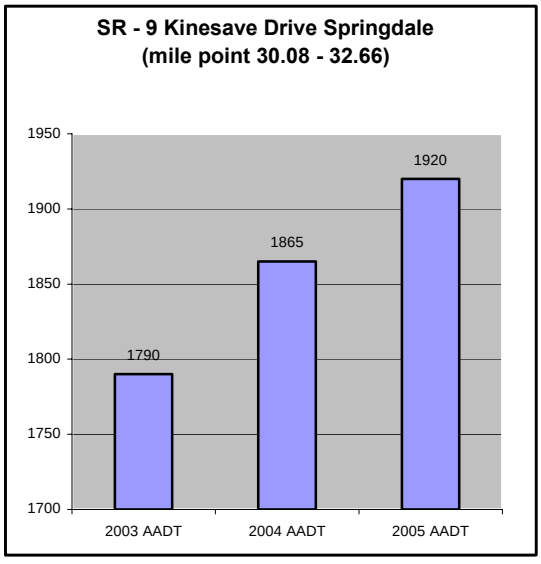
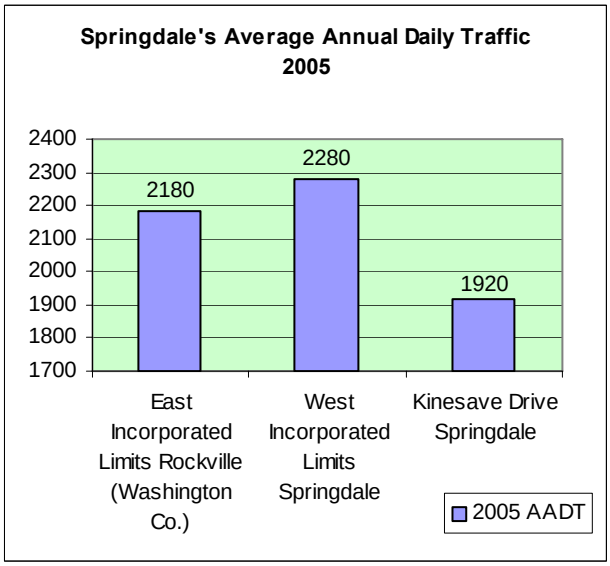


Chart 2-7



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2.7. Traffic Accidents

Traffic accident data was obtained from UDOT's database of reported accidents from 2005. Table 2-3 summarizes the accident statistics for those segments for the year 2005. The roadway segment accident rates were determined in terms of accidents per million vehicle miles traveled. The crash rates for each roadway segment are compared to the expected crash rate for similar facilities across the state.

Upon review of the current accident data for the state system in the area, there appears to be lower than expected accident rates along the study SR 9 corridor. Accident data is for reported crashes on state highway system.

Figure 2-3 shows the safety index, which incorporates crash data taken from 2002-2004 for each of the various segments of the state highway system in the study area.

The safety index is a composite of number of accidents, daily traffic, and the severity for each state highway segment.

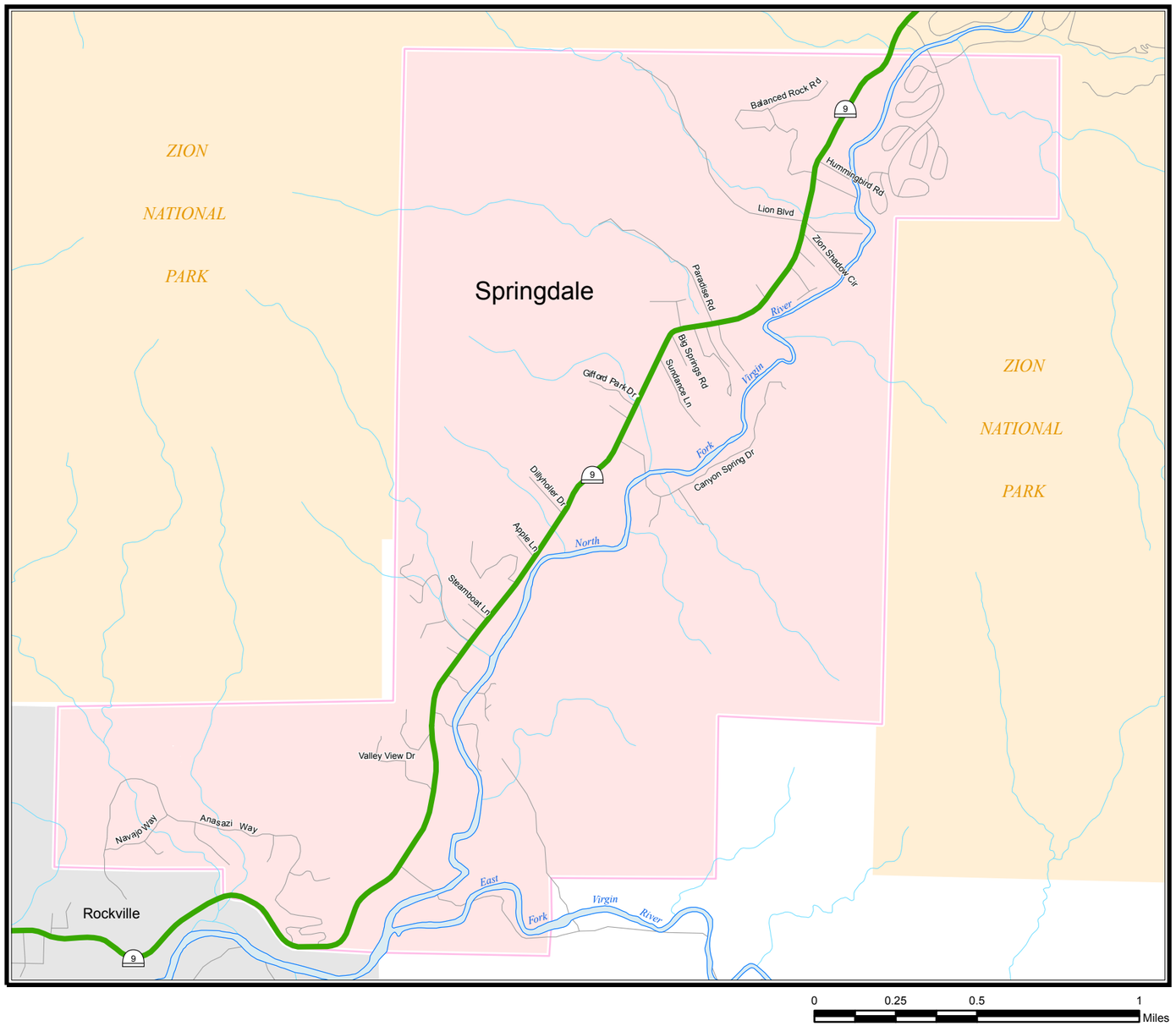
According to Table 2-3 there were fewer accidents than expected at all points along SR-9 in the Town of Springdale.

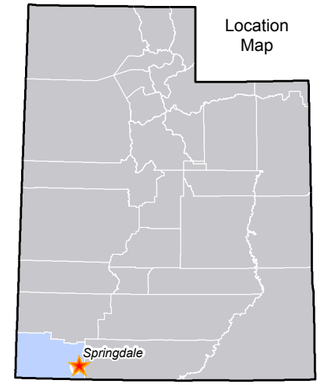
Springdale may wish to review the accident history for the local street system to identify any specific accident hot spot locations.

Table 2-3. Crash Data 2005

					Crash Rate	
Road	From Milepost	End Milepost	AADT (2005)	# Crashes (2005)	Actual	Expected*
9	28.47	29.78	3,611	0	0.00	1.46
9	29.79	30.08	4,018	0	0.00	1.46
9	30.09	32.66	4,968	1	0.22	1.46

* One Fatal accident
Statewide average accident rates for functional class and volume group.
Accident rates are per million vehicle miles traveled. Red indicates higher than expected rates of accidents





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State Roads

Safety Index Group

- Low
- Medium
- High
- Other Roads
- Water Courses

Figure 2-3
State Road Safety Index

2.8. Bicycle and Pedestrian

The Federal Highway Administration recognizes the increasingly important role of bicycling and walking in creating a balanced, intermodal transportation system, and encourages state and local governments to incorporate all necessary provisions to accommodate bicycle and pedestrian traffic. In following this directive, Springdale Town is encouraged to adopt a "complete streets" philosophy that allows for the advancement of a transportation system for both motorized and non-motorized travel. Please refer to www.completestreets.org for more information.

2.8.1. Biking/Trails

Springdale has done an excellent job of documenting the community's desires to further non-motorized transportation in Section 9 of their General Plan. The Plan identifies objectives and implementation strategies that are necessary for the objectives to become realities.

Springdale has also been successful in acquiring Transportation Enhancement funds to make improvements to their Town: The 1995 Streetscape beautification project on main street, and the recent award for a Bike Path Feasibility Study. This proposed project would construct a shared used path from neighboring Rockville through Springdale to Zion National Park. The 4.1 miles of built trail will become part of the Three Rivers Trail in Washington County. Biking opportunities may improve with development of the trail; however many highly skilled bicyclists will prefer to ride on SR-9, and safety improvements to the route should be considered where appropriate.

Springdale's close proximity to Zion National Park makes it a logical draw for tourists, many of who are bicyclists. They may ride individually or as part of the numerous bicycle-touring groups that frequently travel on SR-9.

State Route 9 to Springdale carries a substantial amount of motor vehicle traffic with Springdale the destination. In addition, seasonal bicycle tour groups and random bicycle use are noted utilizing the corridor. Some segments of SR 9 have travel lanes that are narrow in width with little or no shoulder, which oftentimes creates hazardous conditions for bicyclists and pedestrians alike. Heavy traffic and on-street

parking along SR-9 in Springdale may at times create a significant problem for bicyclists and pedestrians in the town of Springdale. The Town would like to alleviate these congestion problems by providing alternative transportation choices, as well as bike/ped facilities.

The Utah Department of Transportation (UDOT) has responsibility for maintaining SR-9. Part of the maintenance of the route includes sweeping, which removes accumulated debris that is critical for bicyclists' safety. UDOT's schedule allows for sweeping this route approximately twice each year. In addition, the Town's streets department sweeps the side streets and the highway when debris accumulates.

2.8.2. Pedestrians

Walking in Springdale is typically an accepted trip making mode choice in Springdale, for tourists and natives alike. Although sidewalks are in place in some areas, there is concern that the sidewalk system is incomplete. There are sections in the central business district with sidewalk on only one side. Another concern in the central business district is the lack of a buffer between pedestrians and on-street parking. The available parking for businesses is directly in front of the buildings, barely off the roadway, making pedestrian passage and access difficult.

A "rockwork ditch" enhances the Town's uniqueness and while a valuable historic asset to the community, has also proven to be difficult for pedestrians. The Town would like to keep the unique ditch, while improving safety and making the water flow more efficiently. However, it continues to be a hazard for out-of-town visitors not familiar with the ditch system.

Springdale Town recognizes the importance of being a pedestrian friendly community and has included objectives necessary to become a pedestrian-oriented town in their General Plan. Their Plan states the need to explore opportunities to promote pedestrian travel, and discourage automobile travel through the downtown area. The Town seeks to design for all abilities, and provide landscaping to create a buffer between pedestrians and motor vehicle

Springdale Town requires developers to include sidewalk, curb and gutter in all new development plans.

2.9. Public Transportation

Although lacking a conventional Town bus system, Springdale cooperates with the National Park Service to operate a special shuttle linking various locations within the community to Zion National Park. This shuttle is a free service that operates on a frequent schedule from early morning until late evening, serving to reduce congestion and air quality problems within both Springdale and Zion National Park.

Southwestern Utah lacks rail passenger service since the May 1997 discontinuance of Amtrak's "Desert Wind" passenger train. Commercial airline service is available at the St. George and Las Vegas airports, as well as at Salt Lake Town International.

2.10. Freight

There are no major freight-generating industries or businesses identified in the Springdale area. Springdale is not a community located on a major highway or freight route thus long haul heavy trucks are not a common sight in town. All trucks must enter and leave Springdale via SR 9 as trucks are not allowed, and will not fit, on the road passing through Zion National Park.

Local truck delivery made to Springdale retail establishments use SR 9 to access the Town as well as Zion National Park. Truck mobility issues have been identified within community such as inadequate turn radii at intersections, the lack of adequate turn-around or loop locations for the local delivery trucks and lack of on-site parking for deliveries. Deliveries mostly are accomplished parking on the SR 9 and ferrying goods to establishments.

2.11

Aviation Facilities & Operations

There are no airport facilities in Springdale. The nearest airport is in St. George, which is approx 25 miles to the southwest. Regional airline service is available at St. George with major commercial jet airline service provided at both Las Vegas and Salt Lake Town International Airport.

2.12. Revenue

Maintenance of existing transportation facilities and construction of new facilities come primarily from revenue sources that include the Springdale Town general fund, Federal funds and State Class C funds.

Financing for local transportation projects consists of a combination of federal, state, and local revenues. However, this total is not entirely available for transportation improvement projects, since annual operating and maintenance costs must be deducted from the total revenue. In addition, the Town is limited in their ability to subsidize the transportation budget from general fund revenues.

2.12.1. State Class B and C Program

The distribution of Class B and C Program monies is established by state legislation and is administered by the State Department of Transportation. Revenues for the program are derived from State fuel taxes, registration fees, driver license fees, inspection fees, and transportation permits. Twenty-five percent of the funds derived from the taxes and fees are distributed to cities and counties for construction and maintenance programs.

Class B and C funds are allocated to each Town and county by the following formula: 50% based on the population ratio of the local jurisdiction with the population of the State, 50% based on the ratio that the Class B roads weighted mileage within each county and the class C roads weighted mileage within each municipality bear to the total class B and Class C roads weighted mileage within the state. Weighted means the sum of the following: (i) paved roads multiplied by five; (ii) graveled road miles multiplied by two; and (iii) all other road types multiplied by one. (Utah Code 72-2-108) For more information go to UDOT's homepage @ www.udot.utah.gov, tab on "Doing Business" select the tab for "Local Government Assistance" here you will find the Regulations governing Class B&C funds.

The table below identifies the ratio used to determine the amount of B and C funds allocated.

Class B and C funds can be used for maintenance and construction of highways, however thirty percent of the funds must be used for construction or maintenance projects that exceed $40,000. Class B and C funds can also be used for matching federal funds or to pay the principal, interest, premiums, and reserves issued for bonds.

Springdale received $15,000 in Fiscal Year 2006 for its Class C fund allocation.

Based on	Of
50%	Roadway Mileage *Based on Surface Type Classification (Weighted Measure) Paved Road (X 5) Graveled Road (X 2) Other Road (X 1)
50%	Total Population

Apportionment Method of Class B and C Funds

2.12.2 Federal Funds

There are federal monies that are available to cities and counties through federal-aid programs. The funds are administered by the Utah Department of Transportation. In order to be eligible, a project must be listed on the five-year Statewide Transportation Improvement Program (STIP).

The Surface Transportation Program (STP) provides funding for any road that is functionally classified as a collector street or higher. STP funds can be used for a range of projects including rehabilitation and new construction. The Joint Highway Committee programs a portion of the STP funds for projects around the State for urban areas. A portion of the STP funds can be used in any area of the State, at the discretion of the State Transportation Commission.

Transportation Enhancement funds are allocated based on a competitive application process. The Transportation Enhancement Advisory Committee reviews the applications and then a portion of those are recommended to the State Transportation Commission for funding. Transportation enhancements include 12 categories ranging from historic preservation, to bicycle and pedestrian facilities, to water runoff mitigation. Other funds that are available are State Trails Funds, administered by the Division of Wildlife Resources.

The amount of money available for projects specifically in the study area varies each year depending on the planned projects in UDOT's Region Four. As a result, federal aid program monies are not listed as part of the study area's transportation revenue.

2.12.3 Local Funds

Springdale, like most cities, has utilized general fund revenues in its transportation program. Other options available to improve the Town's transportation facilities could involve some type of bonding arrangement, either through the creation of a redevelopment district or a special improvement district. These districts are organized for the purpose of funding a single, specific project that benefits an identifiable group of properties. Another source of funding is through general obligation bonding arrangements for projects felt to be beneficial to the entire entity issuing the bonds.

2.12.4 Private Sources

Private interests often provide alternative funding for transportation improvements.

Developers construct the local streets within the subdivisions and often dedicate right-of-way and participate in the construction of collector or arterial streets adjacent to their developments. Developers can be considered as an alternative source of funds for projects because of the impacts of the development, such as the need for traffic signals or street widening. Developers should be expected to mitigate certain impacts resulting from their developments. The need for improvements, such as traffic signals or street widening can be mitigated through dedication, direct construction or impact fees.

3. Future Conditions

3.1. Land Use and Growth

Springdale's Community Transportation Plan must be responsive to current and future needs of the area. The area's growth must be estimated and incorporated into the evaluation and analysis of future transportation needs. This is done by:

- Forecasting future population, employment, and land use;
- Projecting traffic demand;
- Forecasting roadway travel volumes;
- Evaluating transportation system impacts;
- Documenting transportation system needs; and
- Identifying improvements to meet those needs.

This chapter summarizes the population, employment, and land use projections developed for the project study area. Future traffic volumes for the major roadway segments are based on projections utilizing 20 years of traffic count history. The forecasted traffic data are then used to identify future deficiencies in the transportation system.

3.1.1. Population and Employment Forecasts

The Governor's Office of Planning and Budget develop population and employment projections. The current population and employment levels, as well as the future projections for each are shown for Springdale and Washington County in the following table.

Table 3-1 Current and Future Population and Employment

Year	Springdale	Washington County	
	Population	Population	Employment
2005	613	125,010	55,897
2030	1,734	353,922	118,024

3.1.2 Future Land Use

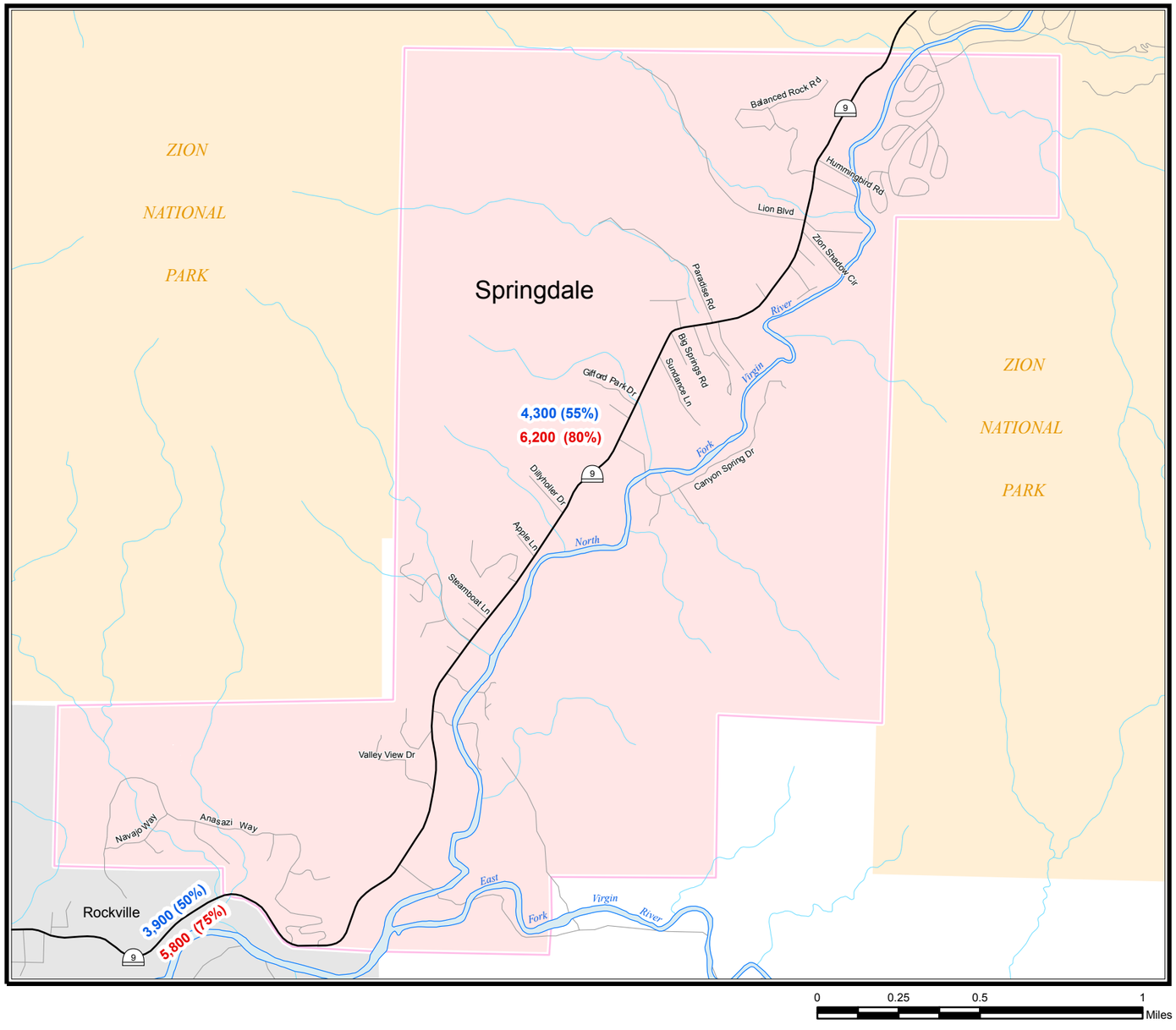
Some areas for developments were discussed during the course of the Community Transportation Plan. Updated Land Use documents can be found in the Springdale General Plan.

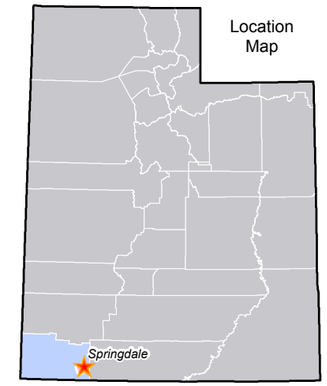
While specific development plans change with time, it is important to note possible areas of development within the Springdale area. Commercial and industrial growth is also important in understanding transportation needs.

3.2. Traffic Forecast

Traffic in the Springdale area is growing and will continue to grow. The Utah Department of Transportation routinely conducts vehicle traffic counts on its facilities. Traffic on State Route 9 has historically grown at about 1.9% per year for the period from 1985 to 2004. It is expected that local street traffic has increased at a similar rate or less.

Figure 3-1 shows the average annual daily traffic, on State Route 9, for the existing condition year 2004 and the forecast year 2030. Also shown is the percentage of the roadway capacity achieved utilizing the volumes above. The map illustrates that the corridor should not have capacity issues, by the year 2030, given continuance with the observed historical growth trend.





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Springdale City Transportation Master Plan
Average Annual Daily Traffic
Year 2004 (% of Roadway Capacity)
Year 2030 (% of Roadway Capacity)

State Roads
Other Roads
Streams

Figure 3-1
Average Annual Daily Traffic

4. Transportation Improvement Projects

4.1. Current State Transportation Improvement Program (2006-2010 STIP)

At the present time there is one state route sponsored STIP or Long Range Plan project in the Springdale area. The project is a bridge rehabilitation project for bridge #F-82. It is currently in the concept development phase (3 to 5 years out). Regularly scheduled highway maintenance activities will also continue as expected.

4.2. Recommended Projects

The following list identifies the six projects that have been identified as having the highest priority scored by the Springdale Transportation Advisory Committee, as identified by this study. These needs/issues were identified through a series of two meetings where the TAC identified the needs and set priorities for projects.

- Paradise Road Intersection (Bridge/Road Realignment)
- Sidewalk Projects
- Shielded Lighting along SR-9
- Speed Study (30 vs. 40 MPH zones)
- New Parking Areas for Zion visitors
- Zion Canyon Bike/Pedestrian Trail

Additionally, many concerns, issues and potential projects were identified which are found on the attached community issues list (Table 4.1).

4.3. Revenue Summary

4.3.1. Federal and State Participation

Federal and State participation is important for the success of implementing these projects. UDOT needs to see the Community Transportation Plan so that they understand what the City wants to do with its transportation system. UDOT can then weigh the priorities of the city against the rest of the state. It is important for Springdale to promote projects that can be placed on UDOT's five-year Statewide Transportation Improvement Program (STIP) as soon as possible. The process for placing projects into the STIP and funding of these projects can be found at UDOT's homepage @ www.udot.utah.gov, tab on "Doing Business" select the tab for " Planning and Programming" here there is a subtopic entitled "Statewide Transportation Improvement Program (STIP)" that describes this program in detail. Additionally coordination with UDOT's Region Director and Engineer for Planning will be practical.

4.3.2. City Participation

The City will fund the local Springdale projects. The local match component and partnering opportunities vary by the funding source.

4.4. Other Potential Funding

Previous sections of this chapter show significant shortfalls projected for the short-range and long-range programs. The following options may be available to help offset all or part of the anticipated shortfalls:

- Adopt transportation impact fees.
- Increased general fund allocation to transportation projects.
- General obligation bonds repaid with property tax levies.
- Increased participation by developers, including cooperative programs and incentives.
- Special improvement districts (SIDs), whereby adjacent property owners are assessed portions of the project cost.
- Sales or other tax increase.
- State funding for improvements on the county roadway system.
- Increased gas tax, which would have to be approved by the State Legislature.
- Federal-aid available under one of the programs provided in the federal transportation bill (SAFETEA-LU is the current bill).

Increased general fund allocation means that General Funds must be diverted from other governmental services and/or programs. General obligation bonds provide initial capital for transportation improvement projects but add to the debt service of the governmental agency. One way to avoid increased taxes needed to retire the debt is to sell bonds repaid with a portion of the municipalities' State Class monies for a certain number of years.

Participation by private developers provides a promising funding mechanism for new projects. Developers can contribute to transportation projects by constructing on-site improvements along their site frontage and by paying development fees. Municipalities commonly require developers to dedicate right-of-way and widen streets along the site frontage. A negative side of the on-site improvements is that the streets are improved in pieces. If there are not several developers adjacent to one another at the same time, a continuous improved road is not provided. One way to overcome this problem is for the jurisdiction to construct the street and charge the developers their share when they develop their property.

Another way developers can participate is through development fees. The fees would be based on the additional improvements required to accommodate the new development and would be proportioned among each development. The expenditure of additional funds provided by the fees would be subject to the City's spending limit. However, development fees are often a controversial issue and may or may not be an appropriate method of funding projects.

Springdale Community Transportation Plan Issues List and Cost Estimates

Location Description	Description of Issue or concern	Issue Category	Possible Action	Planning Level Cost Estimate	Potential UDOT LRP Issue? Potential UDOT Operations Issue?	Local Issue?
Rockville to Zion Park Entrance	Zion Canyon Trail Study	Bike / Ped	Trail Study	$125,000		Local
Rockville to Zion Park Entrance	Zion Canyon Trail Project Construction	Bike / Ped	Trail Project	$1,300,000		Local
Springdale City	Shielded Lighting Desired along SR-9	Enhancement	Lighting Project	$1,500,000		Local
Through Springdale City	Culverts filling up with debris (5 within city limits)	Maintenance	Maintenance Review	UDOT	Potential UDOT OPER	
Rockville to Springdale City	Dry shoulder grass a fire hazard	Maintenance	Maintenance Review	UDOT	Potential UDOT OPER	
Through Springdale City	Provide additional pullout areas for tourists (3-4)	Roadway	Enhancement Project	$250,000		Local
Through Springdale City	Drainage issues at various locations	Roadway	Drainage Study	$75,000		Local
SR-9 & Paradise Road	Intersection / bridge improvements needed. Road by canal. (New development pending to the north)	Roadway	Bridge / Roadway Project	$10,000,000		LRP (UDOT / Local)
La Verkin to Springdale	Review current No Pass / Pass Zone Striping	Safety	Other Study	UDOT	Potential UDOT OPER	
La Verkin to Rockville	Review future passing lane needs along corridor	Safety	Passing Lane Study	UDOT	Potential UDOT OPER	
Rockville to Zion Park Entance	Would like 30 mph for as far as possible	Safety	Speed Study	UDOT	Potential UDOT OPER	
Rockville to Springdale	Incomplete curb and gutter and sidewalk throughout town along SR-9	Safety	Sidewalk Project	$750,000		Local
Rockville to Springdale	Shoulders inadequate for pedestrians and bicycles (40 mph	Safety	Shoulder Project	$450,000	Potential UDOT LRP	
Rockville to Springdale City	Need appropriate signing for parking lots	Traffic	Signing Project	$5,000	Potential UDOT OPER	
Rockville to Springdale City	Need additional marked parking lots through Springdale (**3 lots**). (Parking Committee already in place.)	Traffic	Parking Area Project	$600,000		Local
Citywide	Adopt standard widths for local streets (too narrow)	Traffic	City Ordinance	$0		Local
Springdale City	Study to determine potential locations for turn lanes off of and on to SR-9 throughout town	Traffic	Traffic Study	$50,000		Local
SR-9 & Valley View, SR-9 & Canyon Springs, SR-9 & Winderland Lane, SR-9 & Sage Lane	Various Intersection Improvements	Traffic	Intersection Improvements	$100,000		Local
			Total	**$15,205,000**		

5. Planning Issues, Guidelines, and Other Data

Provided below is a discussion of various issues with a focus on elements that promote a safe and efficient transportation system in the future.

5.1. Guidelines and Policies

These guidelines address certain areas of concern that are applicable to the Springdale Community Transportation Plan.

5.1.1. Access Management

This section will define and describe some of the aspects of Access Management for roadways and why it is so important. Access Management can make many of the roads in a system work better and operate more safely if properly implemented. There are many benefits to properly implemented access management. Some of the benefits follow:

- Reduction in traffic conflicts and reduction of crashes and/or severity of crashes
- Reduced traffic congestion
- Preservation of traffic capacity and level of service
- Improved economic benefits to area businesses and service agencies
- Potential reductions in air pollution from reduced vehicle idle

5.1.1.1. Definition

Access management is the process of comprehensive application of traffic engineering techniques in a manner that seek to optimize highway system performance in terms of safety, capacity, and speed. Access Management is one tool of many that makes a traffic system work better with what is available.

5.1.1.2. Access Management Techniques

There are many techniques that can be used in access management. The most common techniques are signal spacing, street spacing, access spacing, and interchange to crossroad access spacing. There are various distances for each spacing, dependant upon the roadway functionality, roadway type being accessed and the accessing roadway. UDOT has developed a state highway access management program and more information can be gathered from the UDOT website.

5.1.1.3. Where to Use Access Management

Access Management can be used on any roadway. In some cases, such as State Highways, access management in Utah is regulatory law. Access management can be used as an inexpensive way to improve performance on a major roadway that is

increasing in volume. Access management should be used on new roadways and roadways that are to be improved so as to prolong the usefulness of the roadway.

5.1.2. Context Sensitive Solutions

Context Sensitive Solutions (CSS) addresses the need, purpose, safety and service of a transportation project, as well as the protection of scenic, aesthetic, historic, environmental and other community values. CSS is an approach to transportation solutions that find, recognize and incorporate issues/factors that are part of the larger context such as the physical, social, economic, political and cultural impacts. When this approach is used in a project the project become better for all of the entities involved.

5.1.3. Recommended Roadway Cross Sections

Cross sections are the combination of the individual design elements that constitute the design of the roadway. Cross section elements include the pavement surface for driving and parking lanes, curb and gutter, sidewalks and additional buffer/landscape areas. Right-of-way is the total land area needed to provide for the cross section elements.

The design of the individual roadway elements depends on the intended use of the facility. Roads with higher design volumes and speeds require more travel lanes and wider right-of-way than low volume, low speed roads. The high use roadway type should include wider shoulders and medians, separate turn lanes, dedicated bicycle lanes (where appropriate), elimination of on street parking, and control of street and driveway access. For most roadways, an additional buffer area is provided beyond the edge of pavement line. This buffer area may accommodate, curb and gutter, sidewalk, landscaping, and local utilities. Locating the utilities outside the traveled way minimizes traffic disruption in utility repairs or changes in service are needed.

Federal Highway standard widths apply on the all roads that are part of the state highway system. Also, all federally funded roadways in Springdale and Washington County must adhere to the same standards for widths and design. Examples of typical cross-sections can be seen at the end of this chapter.

A parking review of the core business district in Springdale is recommended. It was observed that drivers have great difficulty with up stream sight distance when entering SR 9 from local establishments and local street connections. On-street parking is

located too close to street and driveway intersection causing a lack of vision clearance to enable a safe movement onto the highway. A review of on-street parking should be made to eliminate or relocate parking off-street in these problem areas.

5.2. Bicycles and Pedestrians

5.2.1. Bicycles/Trails

Bicycles are allowed on all state roadways, except where legally prohibited, and as such should be a consideration on all roads that are being designed and constructed and as roadway improvements are taking place. There are a number of bicyclists that consistently travel on SR-9 and adding bike lanes or widening shoulders would create safer traveling conditions. As a means to raise awareness that motorists should expect to see bicyclists on this route, local bicycle advocates are working with UDOT to install Share the Road signs.

The level of interest in bicycling is expected to increase in Springdale, and as growth occurs developers should be encouraged to include shared use or separate bicycle/pedestrian pathways in new developments. Opportunities to increase shoulder-width in conjunction with a roadway project should be taken whenever technically, environmentally, and financially feasible. As referenced in the General Plan, the Town is seeking to further their non-motorized trails system by developing a Trails Master Plan. The Transportation Enhancement funds awarded to the Town for a Bike Path Feasibility Study along SR-9 will work toward this goal. The Town is encouraged to proactively secure trail easements and acquire property along the Virgin River for trails development.

When a trails plan is established, it will be important to note that as all bike/trail facilities are planned, designed and constructed, a review of the connectivity of the trails system is critical. With input from the community, connectivity of the trails should play an integral role in the decision making process for potential projects. In order to enhance the quality of life in the community, the trails should be accessible to all users and incorporate ADA requirements.

The trails, when constructed, may have slight variances in application type due to possible differences in the terrain at a specific trail location or differing user needs. However, regardless of the design type, the applicable design standards found in the latest version of the AASHTO Guide for the Development of Bicycle Facilities should be followed, as well as the Manual on Uniform Traffic Control Devices (MUTCD) guidelines for appropriate signage of the trails system.

5.2.2 Pedestrians

Every effort should be made to accommodate pedestrians in Springdale. The Town should expand on the sidewalks already in place in the downtown area. A good first step is the requirement that

developers must include sidewalk in all new development plans, which the Town has implemented. An opportunity to include accessible sidewalks, while adhering to ADA requirements, during construction of other projects is encouraged. When constructing a sidewalk, for the safety and convenience of pedestrian traffic, placement should be free from debris and obstructions or impediments such as utility poles, trees, bushes, etc. The interconnection of the Town's sidewalk system should be considered as development takes place.

Sidewalks in residential areas should be at least 5-feet wide whenever adequate right-of-way can be secured. This will provide sufficient room and a level of comfort to persons walking in pairs or passing and will specifically allow for persons with strollers or in wheelchairs to pass. On major roadways, sidewalks at least 6-feet wide and with a 6 to 10-foot park strip are desirable. In pedestrian-focused areas, such as schools, parks, sports venues or theaters, and in hotel and market districts, even wider sidewalks are recommended to accommodate and encourage a higher level of pedestrian activity, especially where tourist use would be expected. To ensure consistency of sidewalks throughout the area, UDOT's approved standard for sidewalks should be followed.

The "rockwork ditch" poses as problem in areas of on-street parking and high pedestrian use. It is recommended to enclose the ditch system on both sides of SR 9. Where the Town may deem this is not likely, guardrail or handrail installations are recommended.

There may be opportunity to improve the Town's sidewalk system through the Utah Department of Transportation's Safe Sidewalk Program, made available through the Traffic and Safety Division. The Town should contact UDOT's Cedar City District office for application requirements.

Schools in the area should be aware of the need to develop a routing plan. The routing plan is to be reviewed and updated annually. Information on the Safe Routes to School program is available by contacting the Utah Department of Transportation's Traffic and Safety Division. The existing school crossing on SR 9 should be reviewed for sign, pavement marking and sight distance.

5.3. Enhancement Program

In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) created the Transportation Enhancement program. The program has since been reauthorized in subsequent bills (i.e. TEA-

21). The Transportation Enhancement program provides opportunities to use federal dollars to enhance the cultural and environmental value of the transportation system. These transportation enhancements are defined as follows by SAFETEA-LU:

The term 'transportation enhancement activities' means, with respect to any project or the area to be served by the project, any of the following activities if such activity relates to surface transportation: provision of facilities for pedestrians and bicycles, provision of safety and educational activities for pedestrians and bicyclists, acquisition of scenic easements and scenic or historic sites, scenic of historic highway programs (including the provision of tourist and welcome center facilities), landscaping and other scenic beautification, historic preservation, rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals), preservation of abandoned railway corridors (including the conservation and use thereof for pedestrian or bicycle trails), control and removal of outdoor advertising, archeological planning and research, environmental mitigation to address water pollution due to highway runoff or reduce vehicle caused wildlife mortality while maintaining habitat connectivity, and establishment of transportation museums.

The Utah Transportation Commission, with the help of an advisory committee, decides which projects will be programmed and placed on the Statewide Transportation Improvement Program (STIP). Applications are accepted in an annual cycle for the limited funds available to UDOT for such projects. Information and Applications for the current cycle can be found on UDOT's homepage @ www.udot.utah.gov, tab on "Doing Business" select "Planning and Programming", here you will find a sub-topic entitled "Transportation Enhancement Program". The UDOT Program Development Office, on or before the specified date to be considered, must receive applications. Projects will compete on a statewide basis.

5.4. Transportation Corridor Preservation

Transportation Corridor Preservation will be introduced as a method of helping Springdale's Community Transportation Plan. This section will define what Corridor Preservation is and ways to use it to help the Community Transportation Plan succeed for the Town.

5.4.1. Definition

Transportation Corridor Preservation is the reserving of land for use in building roadways that will function now and can be expanded at a later date. It is a planning tool that will reduce future hardships on the public and the town. The land along the corridor is protected for building the roadway and maintaining the right-of-way for future expansion by a variety of methods, some of which will be discussed here.

5.4.2. Corridor Preservation Techniques

There are three main ways that a transportation corridor can be preserved. The three ways are acquisition, police powers, and voluntary agreements and government inducements. Under each of these are many sub-categories. The main methods will be discussed here, with a listing of some of the sub-categories.

5.4.2.1. Acquisition

One way to preserve a transportation corridor is to acquire the property by exaction or by purchasing it outright. The property acquired can be developed or undeveloped. When the town is able to acquire undeveloped property, the town has the ability to build without greatly impacting the public. On the other hand, acquiring developed land can be very expensive and can create a negative image for the Town. Acquisition of land should be the last resort in any of the cases for Transportation Corridor Preservation. The following is a list of some ways that land can be acquired.

- Development Easements
- Public Land Exchanges
- Private Land Trusts
- Advance Purchase and Eminent Domain
- Hardship Acquisition
- Purchase Options

5.4.2.2. Exercise of Police Powers

Police powers are those ordinances that are enacted by a municipality in order to control some of the aspects of the community. There are ordinances that can be helpful in preserving corridors for the Community Transportation Plan. Many of the ordinances that can be used for corridor preservation are for future developments in the community. These can be controversial, but can be initially less intrusive.

- Impact Fees and Exactions
- Setback Ordinances
- Official Maps or Maps of Reservation
- Adequate Public Facilities and Concurrency Requirements

5.4.2.3. Voluntary Agreements and Governmental Inducements

Voluntary agreements and governmental inducements rely on the good will of both the developers and the municipality. Many times it is a give and take situation where both parties could benefit in the end. The developer will likely have a better-developed area and the municipality will be able to preserve the corridor for transportation in and around the development. Listed below are some of the voluntary agreements and governmental inducements that can be used in order to preserve transportation corridors in the city limits.

- Voluntary Platting
- Transfer of Development Rights
- Tax Abatement

- Agricultural Zoning

Each of these methods has its place, but there is an order that any government should try to use. Voluntary agreements and government inducements should be used, if possible, before any police powers are used. Police powers should be tried before acquisition is sought.

Other Relevant Data

(On the following pages)

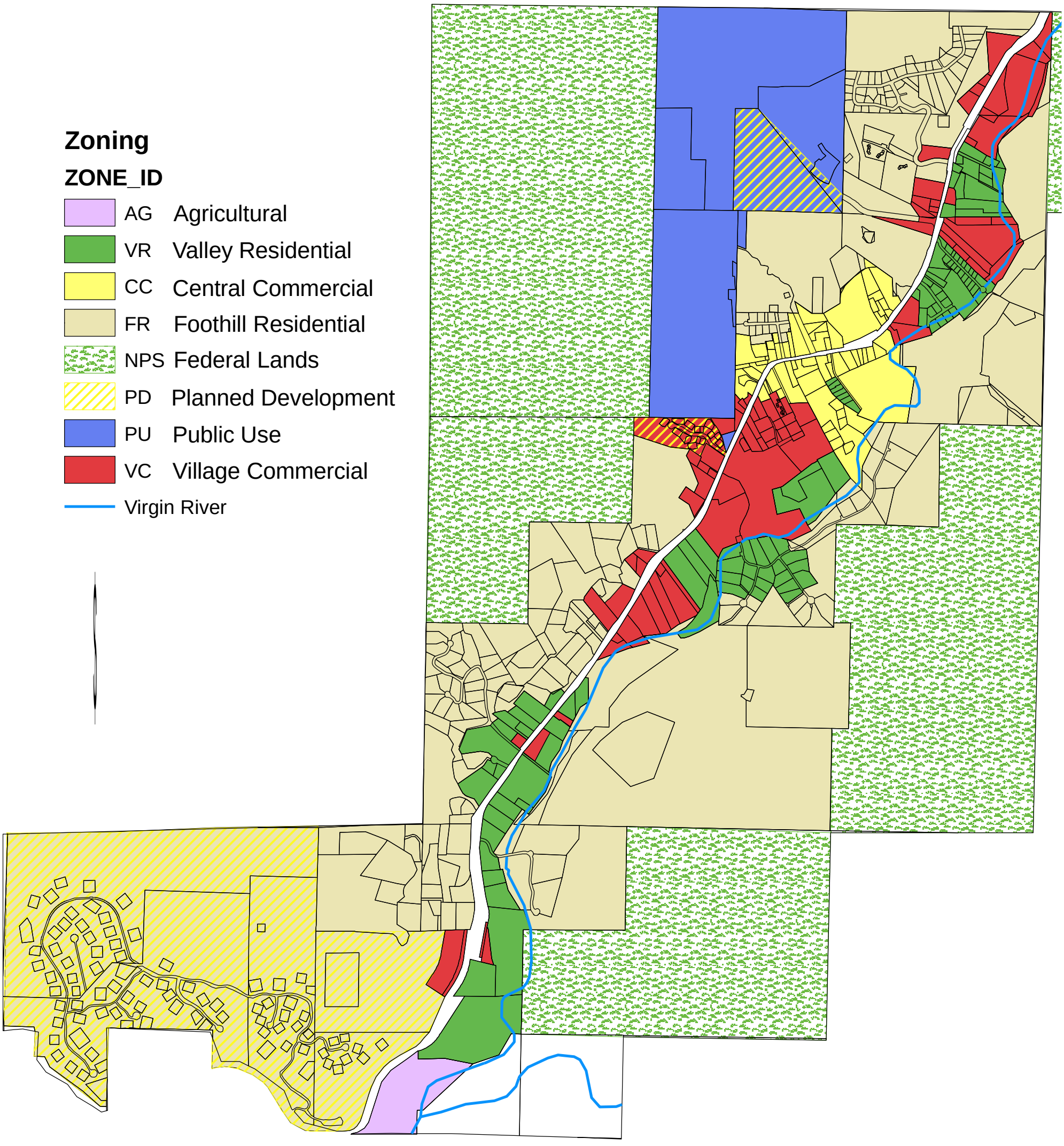
5.4.3. Zoning Map

5.4.4. Travel Forecast Sheets

5.4.5. Suggested types of street cross-sections

TOWN OF SPRINGDALE

Zoning Map



The Zone Boundaries shown on this map are subject to change. To ensure you have the most current information please contact Town Planning Staff at 772-3434.

Route *SR 9*

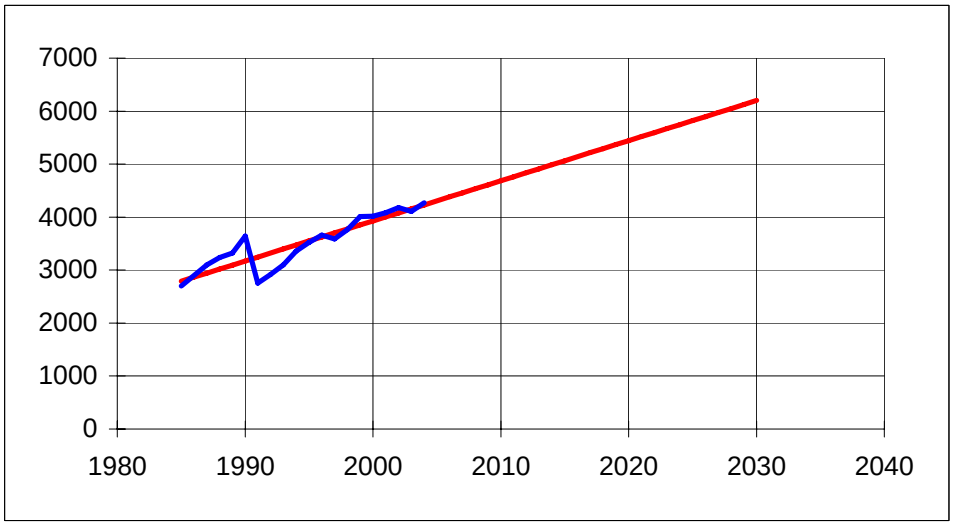
Limits *Springdale*

Year	AADT	Forecast
1985	2,700	2792
1986	2,900	2867
1987	3,100	2943
1988	3,240	3019
1989	3,320	3095
1990	3,640	3170
1991	2,755	3246
1992	2,915	3322
1993	3,100	3398
1994	3,360	3473
1995	3,520	3549
1996	3,660	3625
1997	3,586	3701
1998	3,760	3776
1999	4,010	3852
2000	4,018	3928
2001	4,085	4004
2002	4,180	4079
2003	4,105	4155
2004	4,270	4231
2005		4307
2006		4382
2007		4458
2008		4534
2009		4609
2010		4685
2011		4761
2012		4837
2013		4912
2014		4988
2015		5064
2016		5140
2017		5215
2018		5291
2019		5367
2020		5443
2021		5518
2022		5594
2023		5670
2024		5746
2025		5821
2026		5897
2027		5973
2028		6049
2029		6124
2030		6200

17% Trucks

Projection based on 1985 to 2004 data

1.9% growth rate → 76 vehicles/year



Notes

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Route *SR 9*

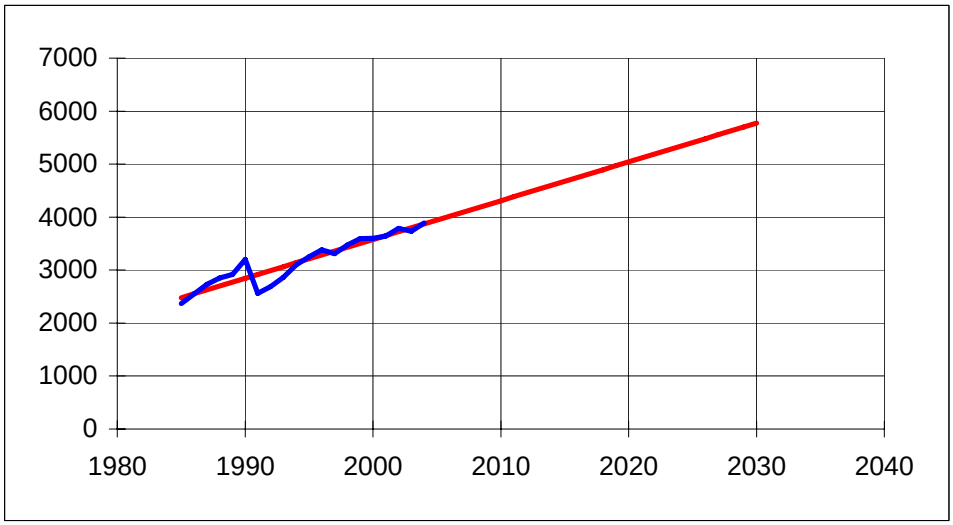
Limits *Rockville*

Year	AADT	Forecast
1985	2,370	2479
1986	2,550	2552
1987	2,730	2625
1988	2,850	2699
1989	2,920	2772
1990	3,200	2845
1991	2,560	2918
1992	2,690	2991
1993	2,860	3065
1994	3,100	3138
1995	3,250	3211
1996	3,380	3284
1997	3,312	3357
1998	3,470	3431
1999	3,595	3504
2000	3,602	3577
2001	3,640	3650
2002	3,785	3724
2003	3,735	3797
2004	3,890	3870
2005		3943
2006		4016
2007		4090
2008		4163
2009		4236
2010		4309
2011		4382
2012		4456
2013		4529
2014		4602
2015		4675
2016		4748
2017		4822
2018		4895
2019		4968
2020		5041
2021		5114
2022		5188
2023		5261
2024		5334
2025		5407
2026		5481
2027		5554
2028		5627
2029		5700
2030		5773

17% Trucks

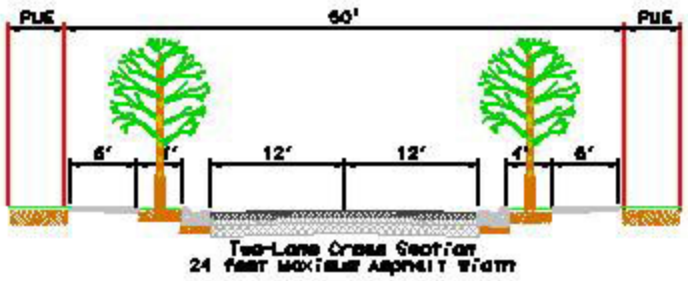
Projection based on 1985 to 2004 data

2.0% growth rate → 73 vehicles/year

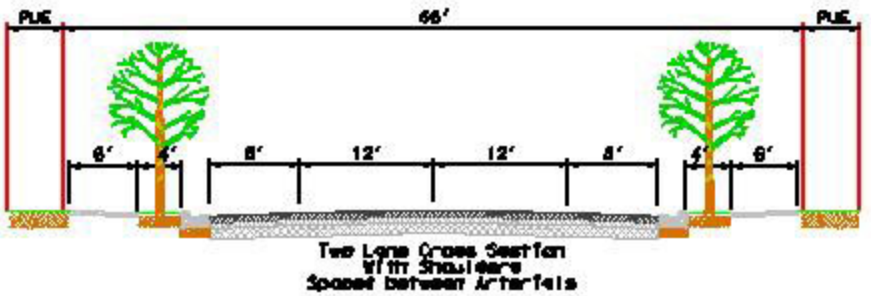


Notes

12/14/2006

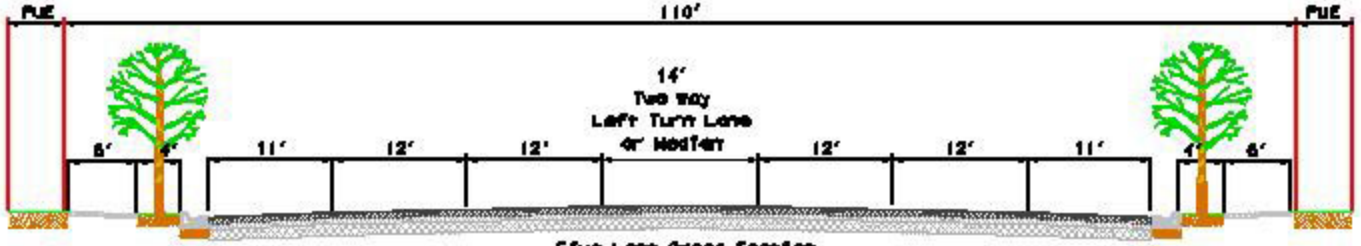


Two-Lane Cross Section
24 feet Maximum Asphalt Width



Two Lane Cross Section
With Shoulders
Spaced between Arterials

Three Lane Cross Section
With Shoulder
Spaced between Arterials



Five Lane Cross Section
With Sholders
Minimum spacing approximately ¼ mile

Notes:

1. Sidewalk Dimension varies from 4' to 6' (See UDOT Std Dwg 08 II Note 3)
2. Public Utility Easement (PUE) dimension varies from 2.5' to 12' Typical
3. Shoulder Dimensions:
   on 80' ROW - varies from 8' to 12'
   on 110' ROW - varies from 10' to 12'
   See AASHTO A Policy on Geometric Design of Highways and Streets

10 5 0 10 20 30

Scale in Feet

Suggested Typical Cross Section

Revised: September 16, 2004